

No. 735,371.

PATENTED AUG. 4, 1903.

M. P. HAYWARD.
LADDER BRACE.

APPLICATION FILED DEC. 2, 1902.

NO MODEL.

Fig. 1.

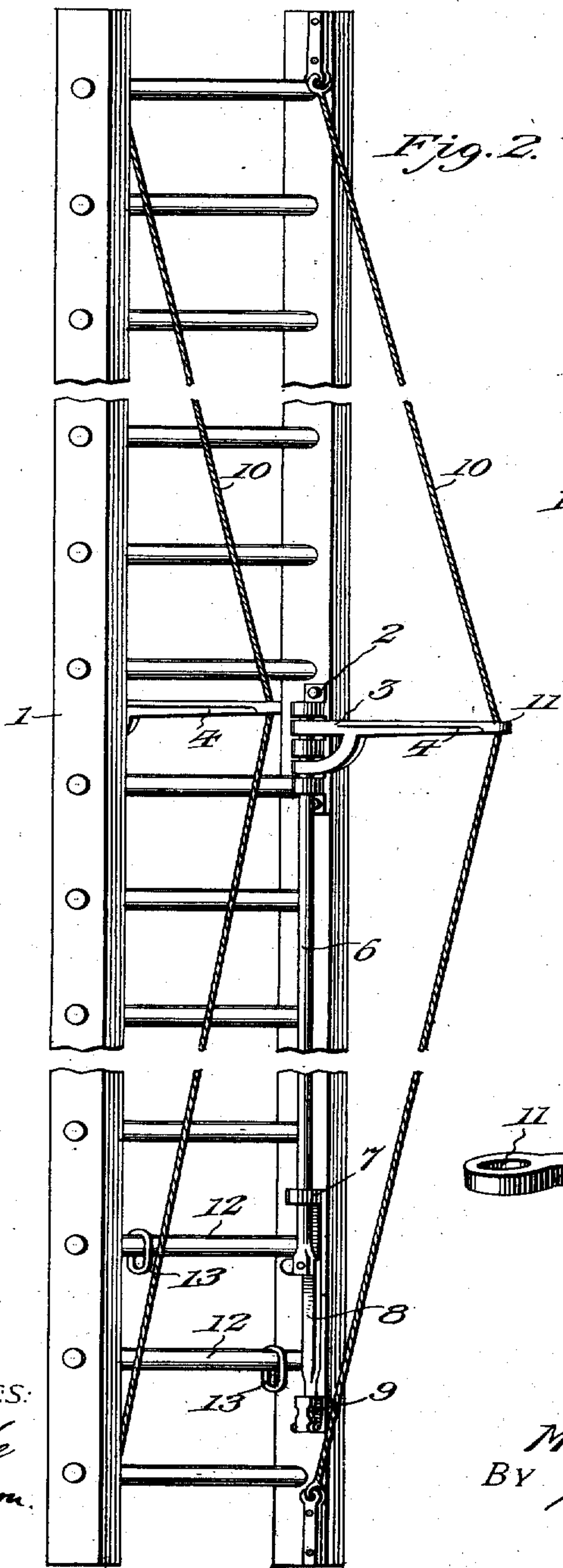


Fig. 2.

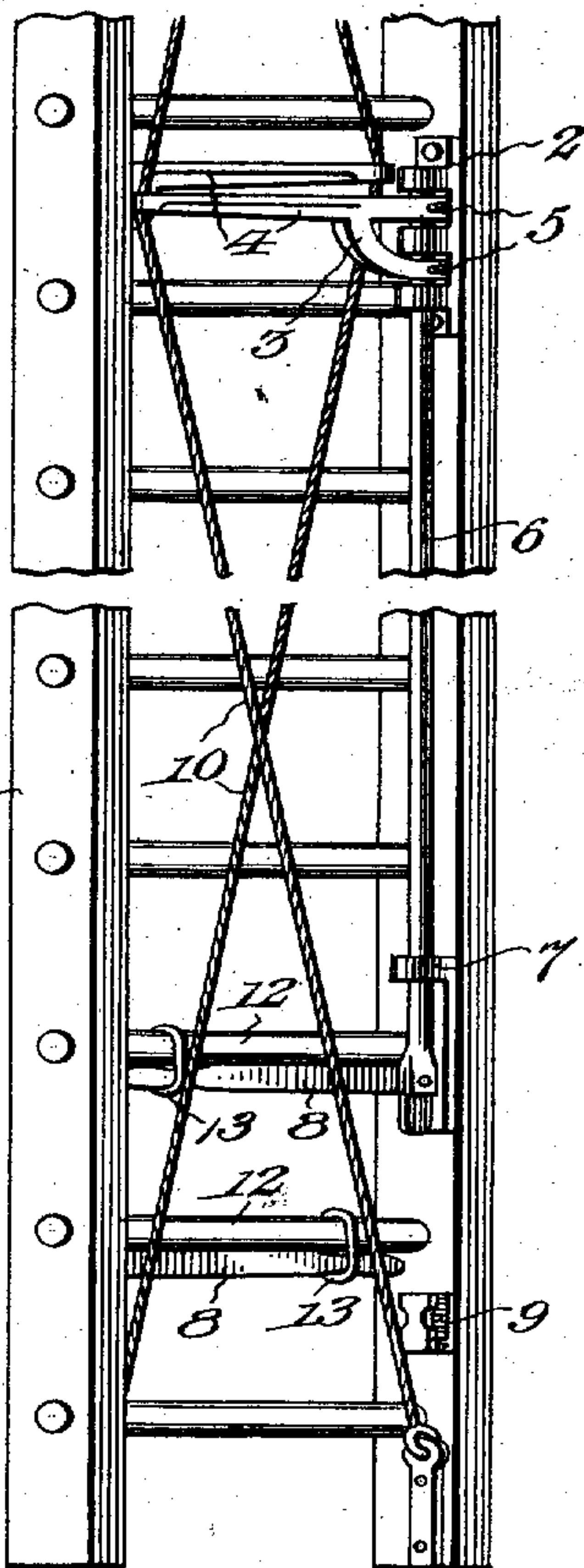
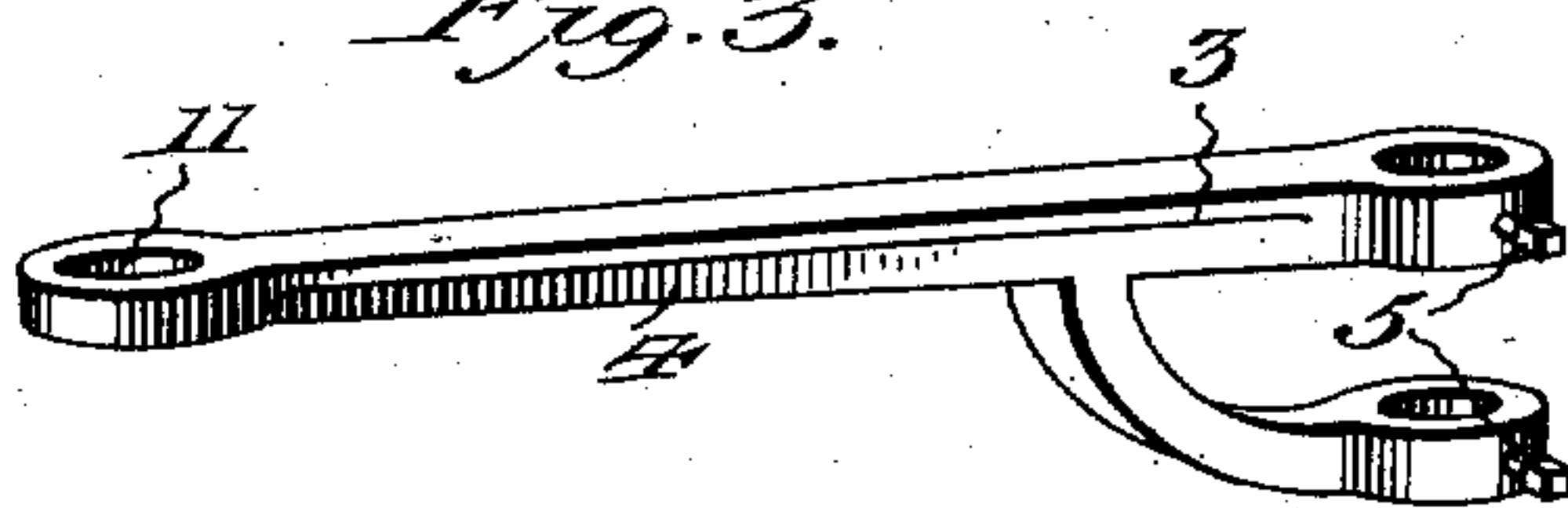


Fig. 3.



WITNESSES:
E. J. McKee
Robert W. Lusk

INVENTOR
Melville P. Hayward
BY *Victor J. Evans*
Attorney

UNITED STATES PATENT OFFICE.

MELVILLE P. HAYWARD, OF QUINCY, MASSACHUSETTS.

LADDER-BRACE.

SPECIFICATION forming part of Letters Patent No. 735,371, dated August 4, 1903.

Application filed December 2, 1902. Serial No. 133,579. (No model.)

To all whom it may concern:

Be it known that I, MELVILLE P. HAYWARD, a citizen of the United States, residing at Quincy, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Ladder-Braces, of which the following is a specification.

My invention relates to new and useful improvements in means for bracing or strengthening ladders, and is more especially an improvement on the device described and claimed in Patent No. 665,780, granted to me on January 8, 1901. Its object is to provide a device of simple and durable construction, which may be readily secured to a ladder of any construction and which is adapted to be swung into or out of operative position from a point adjacent to the foot of the ladder. Locking means of simple construction are employed, whereby the brace may be securely held in operative position upon the ladder.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a perspective view of a ladder having my improved brace connected thereto. Fig. 2 is a similar view of a portion of a ladder, showing the brace folded inward out of operative position; and Fig. 3 is a detail view of the brace-arm detached.

Referring to the figures by numerals of reference, 1 is a ladder, to the inner faces of the side bars of which are secured brackets 2, between the ears of which are journaled the inner forked ends 3 of arms 4. These forked ends of the arms are provided with set-screws 5 or other similar means whereby the arms may be locked securely to rods 6, revolvably mounted within the brackets 2 and within ears 7, secured to the ladder adjacent to the lower end thereof. An L-shaped handle 8 is pivoted within the lower end of each of these rods 6, and the long arm thereof is adapted to be normally engaged by a spring-clip 9, secured to the inner face of the said bar of the ladder. Bracing strips or cables 10 are secured at their ends to the side bars and pass through eyes 11, formed in the outer ends of the arms 4.

It will be seen that when arms 4 are extended laterally from the ladder 1 the L-shaped handles 8 will prevent the rods 6 from revolving within their brackets 2, and said arms 4 are thus held rigidly in position. When it is desired, however, to swing the arms out of operative position, it is merely necessary to disengage handles 8 from the clips 9 and swing them upward until the short arms of these handles are in alignment with the rods 6. The rods can then be revolved within the brackets 2 and ears 7 and the handles can be locked to the adjacent rungs 12 of the ladder by means of rings 13, loosely mounted thereon.

In the foregoing description I have shown the preferred form of my invention; but I do limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing any of the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus described my invention, what is claimed as new is—

1. The combination with a ladder, of bracing means thereon comprising a bracket, a forked arm journaled therein and adapted to swing inward toward the longitudinal center of the ladder, a bracing-strip extending from said arm to opposite ends of the ladder, and means for locking the arm when in its inwardly-extending position.

2. The combination with a ladder, of bracing means thereon comprising a bracket, a revoluble operating-rod journaled within the bracket, an arm extending from the rod and revoluble therewith and being adapted to swing inward toward the longitudinal center of the ladder, and a bracing-strip extending from said arm to opposite ends of the ladder.

3. The combination with a ladder, of bracing means therefor comprising a bracket, a revoluble operating-rod journaled therein, an arm secured to and revoluble with the rod, a bracing-strip extending through said arm and secured to opposite ends of the ladder, and means for rotating the rod and arm whereby said arm may be swung toward or away from the longitudinal center of the ladder.

4. The combination with a ladder, of bracing means comprising a bracket, an operat-

ing-rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arm and secured to opposite ends of the ladder, a handle pivoted to the rod whereby the arm may be swung toward or away from the longitudinal center of the ladder, and means for locking the handle whereby the arm is held in either its innermost or outermost position.

5. The combination with a ladder; of bracing means comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arm and secured to opposite ends of the ladder, an L-shaped handle pivoted to the rod, and means for locking said handle in alinement with the rod.

6. The combination with a ladder; of bracing means therefor comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arms and secured to opposite ends of the ladder, an L-shaped handle pivoted to the rod, means for locking said handle in alinement with the rod, and means for securing the handle to a rung of the ladder.

7. The combination with a ladder; of bracing means therefor comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with the rod, a bracing-strip extending through the arms and secured to the ends of the ladder, an L-shaped handle pivoted to the rod at one end thereof, a clamp for securing said handle in alinement with the rod, and a ring upon a

rung of the ladder adapted to support said handle in raised position.

8. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to be swung inward toward the longitudinal center of the ladder, a bracing-strip extending from said arm to opposite ends of the ladder, and means for locking the arm in either normal or inner position.

9. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to be swung inward toward the longitudinal center of the ladder, means at one end of the ladder for operating the arm, a bracing-strip extending from said arm to opposite ends of the ladder, and means for locking the arm in either normal or inner position.

10. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to swing inwardly toward the longitudinal center of the ladder, a bracing-strip extending from the arm to opposite ends of the ladder, a revoluble operating-rod upon the ladder and connected to the arm, a handle upon the rod and at one end of the ladder, and means for locking the handle in alinement with the rod and to a rung of the ladder, whereby the arm may be held in either normal or inner position.

In testimony whereof I affix my signature in presence of two witnesses.

MELVILLE P. HAYWARD.

Witnesses:

GRACE R. STANCOMBE,
NELLIE L. REID.

Correction in Letters Patent No. 735,371.

It is hereby certified that in Letters Patent No. 735,371, granted August 4, 1903, upon the application of Melville P. Hayward, of Quincy, Massachusetts, for an improvement in "Ladder-Braces," an error appears in the printed specification requiring correction, as follows: In line 69, page 1, after the word "do" the word *not* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of September, A. D., 1903.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

ing-rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arm and secured to opposite ends of the ladder, a handle pivoted to the rod whereby the arm may be swung toward or away from the longitudinal center of the ladder, and means for locking the handle whereby the arm is held in either its innermost or outermost position.

5. The combination with a ladder; of bracing means comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arm and secured to opposite ends of the ladder, an L-shaped handle pivoted to the rod, and means for locking said handle in alinement with the rod.

6. The combination with a ladder; of bracing means therefor comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with said rod, a bracing-strip extending through the arms and secured to opposite ends of the ladder, an L-shaped handle pivoted to the rod, means for locking said handle in alinement with the rod, and means for securing the handle to a rung of the ladder.

7. The combination with a ladder; of bracing means therefor comprising a bracket, a rod journaled therein, an arm within the bracket and secured to and revoluble with the rod, a bracing-strip extending through the arms and secured to the ends of the ladder, an L-shaped handle pivoted to the rod at one end thereof, a clamp for securing said handle in alinement with the rod, and a ring upon a

rung of the ladder adapted to support said handle in raised position.

8. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to be swung inward toward the longitudinal center of the ladder, a bracing-strip extending from said arm to opposite ends of the ladder, and means for locking the arm in either normal or inner position.

9. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to be swung inward toward the longitudinal center of the ladder, means at one end of the ladder for operating the arm, a bracing-strip extending from said arm to opposite ends of the ladder, and means for locking the arm in either normal or inner position.

10. The combination with a ladder, of an arm secured thereto and normally at an angle therewith, said arm being adapted to swing inwardly toward the longitudinal center of the ladder, a bracing-strip extending from the arm to opposite ends of the ladder, a revoluble operating-rod upon the ladder and connected to the arm, a handle upon the rod and at one end of the ladder, and means for locking the handle in alinement with the rod and to a rung of the ladder, whereby the arm may be held in either normal or inner position.

In testimony whereof I affix my signature in presence of two witnesses.

MELVILLE P. HAYWARD.

Witnesses:

GRACE R. STANCOMBE,
NELLIE L. REID.

Correction in Letters Patent No. 735,371.

It is hereby certified that in Letters Patent No. 735,371, granted August 4, 1903, upon the application of Melville P. Hayward, of Quincy, Massachusetts, for an improvement in "Ladder-Braces," an error appears in the printed specification requiring correction, as follows: In line 69, page 1, after the word "do" the word *not* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of September, A. D., 1903.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

Correction in Letters Patent No. 735,371.

It is hereby certified that in Letters Patent No. 735,371, granted August 4, 1903, upon the application of Melville P. Hayward, of Quincy, Massachusetts, for an improvement in "Ladder-Braces," an error appears in the printed specification requiring correction, as follows: In line 69, page 1, after the word "do" the word *not* should be inserted; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of September, A. D., 1903.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.